

What is claimed is:

1. A display device, comprising:

an ac surface discharge type plasma display panel, comprising:

pairs of display electrodes on a first substrate, the display electrodes of each pair being arranged adjacent to each other and generating surface discharges in respectively associated discharge cells,

a dielectric layer covering said pairs of display electrodes,

address electrodes on a second substrate selecting respective discharge cells,

a phosphor layer covering said address electrodes; and

a write address type drive system driving each of the electrodes of said panel, wherein said write address type drive system:

a) prior to addressing the discharge cells, applies a voltage between each pair of display electrodes, and thereby in all the respectively associated discharge cells, such that one electrode of each pair of display electrodes has a positive potential relatively to the other electrode of said pair of the display electrodes, and to the respective address electrode of selected discharge cells, thereby generating a surface discharge between said pair of discharge electrodes; and

b) in conducting addressing, applies a selective voltage between one electrode of a selected pair of the display electrodes and a selected address electrode, such that said address electrode has a potential which is positive relatively to the one electrode of said selected pair of discharge electrodes, thereby generating a write discharge in a selected discharge cell.

2. The display device according to claim 1, wherein said write address type drive system, once said voltage is applied to generate surface discharge between said pair of display electrodes in all the discharge cells, but prior to said addressing, applies a voltage between said pair of display electrodes to erase an electric charge stored on the surface of said dielectric layer.

3. The display device according to claim 1, wherein said write address type drive system sustains a potential of the other electrode of said pair of display electrodes positive, relatively to a pulse base potential of said address electrode, during said addressing.

4. The display device according to claim 2, wherein said write address type drive system sustains a potential of the other electrode of said pair of display electrodes is sustained positive, relatively to a pulse base potential of said address electrode, during said addressing.

5. A plasma display device, comprising:

a surface discharge type plasma display panel, comprising:

first and second substrates forming a discharge space therebetween,

said first substrate having pairs of parallel display electrodes and a dielectric layer covering said pairs of display electrodes,

said second substrate having address electrodes extending in a direction intersecting said pairs of display electrodes and a phosphor layer with a surface to store an electric charge thereon; and

a write address type drive control system, comprising:

a first circuit applying a voltage between each of the pairs of display electrodes forming surface discharge cells to generate surface discharge in all the surface discharge cells, by which a positive electric charge is stored on the electric charge-storing surface of said phosphor layer, and

a second circuit applying a selective scanning pulse to one electrode of the selected pair of display electrodes so as to have a negative potential relatively to the other electrode of the selected pair of display electrodes, and selectively applying a write pulse to a selected address electrode so as to have a positive potential relatively to said one electrode of the selected pair of display electrodes for writing.

6. A plasma display device, comprising:

a plasma display panel, comprising:

a pair of substrates facing each other and defining a gas discharge space therebetween,

pairs of display electrodes arranged on one of said substrates, each pair generating surface discharges therebetween and defining a corresponding display line,

a dielectric layer covering said pairs of display electrodes and said one of the substrates,

address electrodes on the other one of the substrates, extending in a direction intersecting said pairs of display electrodes, and

a phosphor layer formed between said address electrodes and said gas discharge space and exposed to said gas discharge space; and
a write address type drive control system, comprising:

a first circuit, prior to selectively addressing a discharge cell defined at an intersection between a pair of adjacent display electrodes and an address electrode, applying a voltage between at least one pair of display electrodes by which one electrode of said pair of display electrodes has a positive potential relatively to a potential of the other electrode of said pair of display electrodes, thereby to generate surface discharges in all the surface discharge cells, corresponding to said at least one pair of display electrodes, and store a positive electric charge on the electric charge-storing surface of said phosphor layer,

a second circuit applying a voltage between said pair of display electrodes to erase an electric charge on said dielectric layer stored during said surface discharge, and

a third circuit applying an address voltage between a selected address electrode and said one of said pair of display electrodes, said address voltage having a polarity so as to generate a write discharge by being added to said positive electric charge stored on the surface of said phosphor layer, to thereby perform writing.

7. A method of addressing a surface discharge type plasma display panel, said panel comprising pairs of display electrodes transversely extending along display lines, vertically extending address electrodes, unit luminescent areas constructed in a matrix form at intersections between said pairs of display electrodes and said address electrodes, a dielectric layer covering said pairs of display electrodes, a phosphor layer covering said address electrodes, and a discharge space formed between said dielectric layer and said phosphor layer, said addressing method comprising:

applying a voltage higher than a discharge initiating voltage between each pair of display electrodes by which one electrode of the pair of display electrodes has a potential relatively positive to the other electrode of the pair of display electrodes and to the address electrode, thereby to generate surface discharges in all the unit luminescent areas and store a positive electric charge on the surface of said phosphor layer;

applying an erasing voltage between each pair of display electrodes to make into an erase state an electric charge stored on said dielectric layer by said surface discharge; and

applying a write voltage between a selected address electrode and said one electrode of said pair of display electrodes on each display line in which said address electrode has the same

positive polarity as the electric charge stored on the surface of said phosphor layer, to generate a write discharge therebetween and thereby select a unit luminescent area on the display line.

8. A method of driving a surface discharge type plasma display panel, said panel comprising pairs of display electrodes transversely extending along display lines, vertically extending address electrodes, discharge cells constructed in a matrix form at intersections between said pairs of display electrodes and said address electrodes, said pairs of display electrodes being covered with a dielectric layer, said address electrodes being covered with a phosphor layer, and a discharge space between said dielectric layer and said phosphor layer, said discharge cells comprising phosphors of three different colors aligned in a repeated pattern in a line direction along said display lines, the colors of the phosphors of said discharge cells aligned in a column direction intersecting said display line being the same, each set of three adjacent discharge cells with respective phosphors of three different colors, in the display line direction, comprising an image element, said addressing method comprising:

applying a voltage higher than a discharge initiating voltage between each pair of display electrodes by which one electrode of the pair of display electrodes has a potential relatively positive to the other electrode of the pair of display electrodes and to the address electrode to generate surface discharge in all the discharge cells;

applying an erasing voltage between each pair of said display electrodes to make into an erase state an electric charge stored on said dielectric layer by said surface discharge;

applying a write voltage between a selected address electrode and said one electrode of said pair of display electrodes on each display line in which said address electrode has a relatively positive polarity, to generate a write discharge therebetween and thereby write a display datum in a discharge cell on the display line; and

applying a sustain voltage with alternating polarities between said pair of display electrodes so as to utilize an electric charge on said dielectric layer, stored during said write discharge, to reproduce the written display.